

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)	
BOCK et al.)	Art Unit: Unassigned
Application No. 10/516,662)	Examiner: Unassigned
Filing Date: June 2, 2003)	Confirmation No. 2888
For: VARIANTS OF ANTITHROMBIN III)	

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

NEEDLE & ROSENBERG, P.C. Customer Number 23859

Sir:

Pursuant to the requirements of 37 C.F.R. § 1.56, submitted herewith on the accompanying Information Disclosure Statement List is a listing of documents known to Applicants and/or their attorneys. In accordance with 37 CFR 1.98 (a)(2), copies of any cited U.S. Patent or U.S. Patent Publication documents are not enclosed.

In accordance with the provisions of M.P.E.P. § 2001.06(b) and 37 C.F.R. § 1.98(b)(3), Applicants would like to bring to the attention of the Examiner the existence of the co-pending patent application(s) identified below, which were filed in the United States Patent and Trademark Office:

Application No.	Date Filed	<u>Inventors</u>	Attorney Docket No.
PCT/US05/00843	January 10/2005	Bock et al.	21101.0054P1

In accordance with the requirements of 37 C.F.R. § 1.98(a)(2)(iii), a copy of the abovereferenced application specification(s), including the claims and drawings thereof, is enclosed.

ATTORNEY DOCKET NO. 21101.0021U2 Application No. 10/516,662

Consideration of the cited documents and making the same of record in the prosecution of the above-referenced application are respectfully requested.

No fee is believed due; however, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

NEEDLE & ROSENBERG, P.C.

Christopher L. Curfman, JD, PhD

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CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence, including any items indicated as attached or included, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

Christopher L. Curfman

Date



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ATTORNEY DOCKET NO. 21101.0021U2 APPLICATION NO. 10/516,662 SHEET 1 OF 4

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INFORM	ATION D	USCLOSURE ST	TATE	MENT	Appl	ication Number		16,662	Klowii
INFORMATION DISCLOSURE STATEMENT LIST			Filing	Filing Date June 2, 2003		3			
		2.01				Named Inventor	Bock	et al.	
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					PATEN	T DOCUMENTS			
Examiner's Initials	Cite No.	Document No.		Date		Name	Class	Subclas	
	A1	6,878,813	04/12			et al.	530	393	12/11/01
	A2	5,204,253	04/20			ord et al.	435	459	
	A3	5,420,252	05/30		Kato		530	393	
	A4	5,618,713	04/08			meissl et al.	435	226	
	A5	5,700,663	12/23			emeissl et al.	435	69.6	
	A6	5,843,705	12/01			lio et al.	800	7	
						ENT DOCUMEN			
Examiner's Initials	Cite No.	Foreign Patent Documentry Code-Number-Kind		Dat	e	Nam	e		Translation Yes/No
7.	A7	EP 0 568 833 A1		08/04/9	93	Kato et al.			
	A8	WO 90/09737		07/09/9	90	Blood Research	Center		
	A9	WO 91/00291		01/10/9	91	Akzo			
	A10	WO 95/05853		03/02/9	95	Carson et al.			
				NON-I	PATEN	IT DOCUMENTS			
Examiner's Initials	Cite No.		Non-Patent Citations (include Author, Title, Publisher, Relevant Pages, Date and Place of Publication)						
	A11	Backovic and Gettins, "Insight into residues critical for antithrombin function from an expanded database of							
		sequences that includes frog, turtle and ostrich antithrombins." J. Proteome Res. 2002 1:367-373.							
	A12		Bayston et al. "Familial overexpression of beta antithrombin caused by an Asn135Thr substitution." Blood						
	A13	Bick et al. "Antithre	ombin	III patter	ns in d	isseminated intra	vascula	coagul	ation." Am. J. Clin. Pathol. 1980
	A14	Blauhut et al. "Sub	73(4):577-83. Blauhut et al. "Substitution of antithrombin III in shock and DIC: a randomized study." Thromb. Res. 1985						
	A15		39(1):81-9. Bock et al., "Cleaved and inactivated antithrombin III in bronchoalveolar lavage (BAL) samples from acute						
	AIS								ntiproteases, seminar, Amer. J.
							, 11010	u000// (i	improtodoso, commar, / imor. c.
	A16		Respir. Crit. Care Med., 2001 , A63. (Poster Abstract) Bock et al. "Cloning and expression of the cDNA for human antithrombin III." Nucleic Acids Res. 1982						
	'	10(24):8113-25.							
	A17	Brennan et al. "Physiological variant of antithrombin-III lacks carbohydrate sidechain at Asn 135." FEBS Lett. 1987 219(2):431-6.							
	A18	Buller and Cate, "Acquired antithrombin III deficiency: laboratory diagnosis, incidence, clinical implications,							
	A19	and treatment with antithrombin III concentrate." Am. J. Med. 1989 87(3B):44S-48S. Carlson et al. "Comparison of the behavior in vivo of two molecular forms of antithrombin III." Biochem. J.							
	A20	1985 225:557-64.	"Plaks	albumin	alpha	1-antitrypsin anti	thrombir	and th	e mechanism of inflammatory
	7120	thrombosis." Natur	re. 198	5-317(6	039):73	30-2.			
	A21		Cohen et al. "In vivo inactivation of antithrombin III is promoted by heparin during cardiopulmonary bypass." J. Invest. Surg. 1992 5:45-9.						
	A22	Cunningham et al.	"Deve	elopment	of an		antithro	mbin th	rough mutagenesis at P4."
		Blood. 1995 86(10	Supp	.).375A.	(ADSU	act)			

Examiner Signature:	Date Considered:	۲,			
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					

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ATTORNEY DOCKET NO. 21101.0021U2 APPLICATION NO. 10/516,662 SHEET 2 OF 4

			Application Number	Complete if Known 10/516,662		
INFORMATIO	N D	ISCLOSURE STATEMENT	Application Number			
		LIST	Filing Date	June 2, 2003		
// laa			First Named Inventor	Bock et al.		
(Use	as ma	any sheets as necessary)	Group Art Unit	Unassigned		
			Examiner Name	Unassigned		
A	.23	thrombin and elastase." Thromb.	Res. 1997 88(2):171-81.	position on the reation of antithrombin with		
A	.24	macroglobulin in disseminated into 1975 6(1):27-38.	travascular coagulation a	rombin III-heparin cofactor and alpha2 nd hepatic failure coagulopathy." Thromb Res.		
A	25	endothelium: Antithrombin binding 111:1293-1304.	g on cultured endothelial	paran sulfate proteoglycans in vascular cells and perfused rat aorta." J. Cell Biol. 1990		
A	26	a concentrate containing F XIII ar	nd native von Willebrand	Il treatment with antithrombin III concentrate and factor." J. Intern. Med. 1989 225(1):21-7.		
	.27	pneumoniae induced sepsis." Thr	omb Haemost. 1993 69(2			
, A	28	migration by the serpin antithroml	bin III." Blood 2001 97:10	ycanmediatedregulation of human neutrophil 79-85.		
	.29	endotoxemia or bacteremia." Am.	Emerson et al. "Efficacy of antithrombin III supplemtation in animal models of fulminant Eschericia coli endotoxemia or bacteremia." Am. J. Med. 1989 87:27S-33S.			
	.30	Emerson et al. "Protection against disseminated intravascular coagulation and death by antithrombin-III in the Escherichia coli endotoxemic rat." Circ Shock. 1987 21(1):1-13.				
A	.31	Ersdal-Badju et al. "Elimination of glycosylation heterogeneity affecting heparin affinity of recombinant human antithrombin III by expression of a beta-like variant in baculovirusinfected insect cells." Biochem. J. 1995 310:323-30.				
A	32	Fourrier et al. "Double-blind, placebo-controlled trial of antithrombin III concentrates in septic shock with disseminated intravascular coagulation." Chest. 1993 104(3):882-8.				
A	.33	Franzen et al. "Structural studies on the carbohydrate portion of human antithrombin III." J. Biol. Chem. 1980 255(11):5090-3.				
A	.34	Frebelius et al. "Thrombin inhibition AT-beta." Thromb. Vasc. Biol. 19		the subendothelium is explained by the isoform		
A	35	Arterioscler Thromb. 1994 14(2):2	254-60.	iferation in human arterial smooth muscle cells."		
A	36	patients." Thromb Res. 1984 35(4	1):459-66.	DIC treatment. A pilot study in 9 severely ill		
A	37	Intensive Care Med. 1984 10(1):2	23-8.	nd their inhibitors in critically ill patients."		
A:	38	by its interaction with microvascul	lar endothelium." Crit. Ca			
A	39	Ishiguro, K. et al. "Complete antithrombin deficiency in mice results in embryonic lethality." J. Clin. Invest. 2000 106(7):873-878.				
A	40	activates antithrombin III for thron 277:24460-5.	nbin inhibition but not fac	with underlying glutamic acid-255 partially tor Xa inhibition." J. Biol. Chem. 2002		
A	41	Physiol Chem. 1981 362(2):103-1	2.	olated human antithrombin III." Hoppe Seylers Z		
A	42	cytokines, and soluble adhesion r 2):19-32.	molecules in acute inflam	therapy on the release of cellular proteinases, mation." Semin Hematol. 1995 32(4 Suppl		
. A	43		he inactivation of antithro	mbin by neutrophil elastase." Science. 1987		
Evaminar Signatur			Considered:			

Examiner Signature:	Date Considered:				
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		First Named Inventor	Bock et al.	
(Use as n	nany sheets as necessary)	Group Art Unit	Unassigned	
		Examiner Name	Unassigned	
	#A (11)			
A44	mechanism." Arch. Biochem. Bio		of the heparin-dependent anticoagulant	
A45			nhanced antithrombin activity without heparin."	
743	69 th Scientific Sessions, Abstract			
A46			s of Medical Implants. 2000 10:19-45.	
A47			beta by antithrombin III." Biochemistry. 1976	
	15(2):373-7.			
A48			n III, C1(-)-inhibitor and alpha 2-macroglobulin in	
		d disseminated intravasc	ular coagulation (DIC)." Am. J. Clin. Pathol.	
	1984 82(4):396-404.			
A49		ent inhibition of factor VIIa	by antithrombin III and heparin." J. Biol. Chem.	
A50	1993 268(2):767-70.	abin concentrates and evi	perimental disseminated intravascular	
, A30	coagulation." Semin. Thromb. He			
A51			y." Lancet. 1977 1(8022):1133-5.	
A52		Marcum et al. "Microvascular heparin-like species with anticoagulant activity." Am. J. Physiol. 1983 245(5		
-	Pt 1):H725-33.	,		
A53	A53 Minnema et al. "Recombinant human antithrombin III improves survival and attenuates inflammatory responses in baboons lethally challenged with Escherichia coli." Blood. 2000 95(4):1117-23.			
A54	Mizuochi et al. "Structural studies of the carbohydrate moiety of human antithrombin III." Arch. Biochem. Biophys. 1980 203(1):458-65.			
A55	Nakajima et al., "Mapping the extended substrate binding site of cathepsin G and human leukocyte elastase," J. Biol. Chem. 1979 254:4027.			
A56	mediators in fatal sepsis." J. Lab.	Clin. Med. 1992 119(2):1	toferrin in sepsis: evidence for neutrophils as 159-68.	
A57	O'Reilley et al. "Antiangiogenic ad 1999 285(5435):1926-8.	ctivity of the cleaved conf	ormation of the serpin antithrombin." Science.	
A58	Oelschläger et al. "Antithrombin I vascular endothelial cells." Blood		appa B activation in human monocytes and	
A59			mediating heparin activation of antithrombin. ants." Trends Cardiovasc. Med. 2002 12:198-	
A60		of the antithrombin confo	ride in heparin acceleration of antithrombin- rmational change contribution to heparin rate	
A61	Ostrovsky et al. "Antithrombin III ischemia/reperfusion." Circulation	prevents and rapidly reve	rses leukocyte recruitment in	
A62	Owen et al." P1 variant antithrom increased heparin affinity and are activation mechanism." FEBS Let	bins Glasgow (393 Arg to resistant to catalytic clea tt. 1991 280(2):216-20.	His) and Pescara (393 Arg to Pro) have avage by elastase. Implications for the heparin	
A63	antitrypsin and antithrombin-III." T Elsevier/North Holland Biomedica	The Physiological Inhibito al Press. 1979 pp. 43-54.	rin cofactor) – partial homology between α 1-rs of Coagulation and Fibrinolysis,	
A64	Peterson and Blackburn, "Isolatio carbohydrate content and enhance		an antithrombin III variant with reduced iol. Chem. 1985 260(1):610-5.	

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			First Named Inventor	Bock et al.
	(Use as m	any sheets as necessary)	Group Art Unit	Unassigned
			Examiner Name	Unassigned
	1 465	Disease and Dook "Donid and office		d mutagenesis method." Methods in Mol. Biol.
	A65	Vol. 67, PCR Cloning Protocols. I	From moluclar cloning to	genetic engineering. B.A. White Humana Press,
	1	Totowa, NJ, 1996, 183-8.		
	A66			utagenesis technique using Pfu DNA
		polymerase." Nucleic Acid Res. 1	994 22(13):2587-91.	
	A67	Picard et al. "Partial glycosylation	of antithrombin III aspara	agine-135 is caused by the serine in the third
		position of its N-glycosylation con	isensus sequence and is	responsible for production of the beta-
	1.60	antithrombin ill isolorm with enna	inced nepann allinity. Bit	ochemistry. 1995 34(26):8433-40. pid antithrombin III/heparin inhibition of factor
•	A68	VIIa." Blood. 1993 81(10):2600-7.		рід анцінопівін інлерані інпівіцон от тассо
	A69	Rosenberg and Damus, "The pur	ification and mechanism	of action of human antithrombin-heparin
		cofactor." J. Biol. Chem. 1973 24	8(18):6490-505.	
	A70		mostatic mechanism and	its relationship to the action of heparin." Fed.
		Proc. 1977 36(1):10-8.		
	A71	Rothenburger et al. "Treatment of	t thrombus formation ass	ociated with theMicroMed DeBakey VAD using
 	A 72	recombinant tissue plasminogen		d metastasis." Curr. Opin. Hematol. 1996
	A72	3(5):379-84.	i cancer angiogenesis an	d metastasis. Cum. Opin. Hemator. 1330
	A73		ractions of neutrophil ela	stase in haemostatic disorders of patients with
	'''	severe infections." Eur. J. Haema		
	A74	Stephens et al. "Site directed mut	tagenesis of the reactive	center (serine 394) of antithrombin III." J. Biol.
	1	Chem. 1988 263(31):15849-52.	_	•
	A75			in bleomycin-induced pulmonary fibrosis." Am.
		J. Respir. Cell Mol. Biol. 1991 5(1):34-40.	
	A76	Tejada, M.L. and Deeley, R.G. "C	Cloning of an avian antithr	ombin: developmental and hormonal regulation
	 	of expression." Thromb. Haemos		
	A77			alpha-antithrombin, absent in beta-antithrombin, he heparin-induced conformational change."
		Biochemistry: 1997 36(22):6682-		ne nepami-muuceu comormational change.
	A78	Uchiha et al "Antithrombin III (AT	III) prevents LPS-induce	ed pulmonary vascular injury: novel biological
	1 11,0	activity of AT III." Semin. Thromb.		
-	A79	van Boven and Lane, "Antithromb	oin and its inherited defici	ency states." Semin. Hematol. 1997 34(3):188-
	İ	204.	· .	
	A80	Varga et al. "Infectious entry path	way of adenovirus type 2	2." J. Virol. 1991 65(11):6061-70.
	A81			vascular coagulation." Clin. Appl.
		Thrombosis/Hemostasis. 1995 1:		
	A82		mbin III in severe sepsis:	a randomized controlled trial." JAMA. 2001
	A83	286(15):1869-78.	III-heta associates more	readily than antithrombin III-alpha with
	A63	uninjured and de-endothelialized		vivo." Arteriosclerosis and Thrombosis. 1991
	•	11:530-9.		
	A84	Wolff et al. "Direct gene transfer i	nto mouse muscle in vivo	o." Science. 1990 247(4949 Pt 1):1465-8.
	A85			ors for use in treatment of sepsis." Temple Univ.
	<u> </u>	School of Medicine, publically ava	allable at the Univeristy o	f Michigan dissertation archive in 1999.

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